What is claimed is:

Claim 1. An electric rotating machine comprising:

a rotor having a plurality of N and S poles alternately arranged in a rotating direction;

a stator including an annular stator core surrounding the rotor and provided with a plurality of slots, and multiple-phase stator windings embedded in the slots; and

a frame supporting the rotor and the stator;

wherein the stator windings are formed by winding a plurality of continuous wires around a spool such that straight parts of the stator windings pressed in a flat shape are wound in rings around a cylindrical member provided with grooves the number of which is equal to that of the slots, the cylindrical member is inserted in a bore defined by the annular stator core so that the grooves of the cylindrical member are arranged opposite to the slots, respectively, sets of the windings are folded back alternately outside the slots of the stator core and are wound such that the sets of the windings are embedded alternately in the direction of the depth of the slots every predetermined number of slots, leading and trailing ends of the plurality of continuous wires are superposed after being wound at least one turn around the circumferentially arranged slots of the stator.

Claim 2. The electric rotating machine according to claim 1, wherein the stator windings are at least two sets of windings formed by winding a plurality of continuous wires, and the stator windings are arranged with displacement of a predetermined number of slots so that the trailing ends of the sets of windings may not be superposed with respect to a circumferential direction of the stator core.

Claim 3. The electric rotating machine according to claim 1 or 2, wherein the slots of the stator core are open slots.

Claim 4. The electric rotating machine according to claim 3, wherein the stator windings embedded in the slots of the stator core are fixed in place by inserting magnetic wedges in the slots.

Claim 5. A method of fabricating an electric rotating machine including a rotor having a plurality of N and S poles alternately arranged in a rotating direction, a stator including an annular stator core surrounding the rotor and provided with a plurality of slots, and a multiple-phase stator windings embedded in the slots, and a frame supporting the rotor and the stator, said method comprising;

forming the stator windings by winding a plurality of continuous wires around a spool;

press-forming flat straight parts of the stator windings to be embedded in the slots of the stator core;

winding a stator winding set in the annular shape around a cylindrical member provided with grooves the number of which is equal to that of the slots of the stator core;

inserting the cylindrical member in a bore defined by the annular stator core;

adjusting the position of the cylindrical member in the bore of the annular stator core so that the grooves of the cylindrical member are positioned opposite to the slots of the stator core, respectively;

expanding and inserting the straight parts of the windings wound around the grooves in the slots of the stator core;

alternately folding back the winding set outside the slots of the stator core to form windings embedded alternately in the direction of the depth of the slots every predetermined number of slots; and

winding leading and trailing ends of the plurality of continuous wires at least one turn around the circumferentially arranged slots of the stator core so that the leading and the trailing ends of the plurality continuous wires are superposed.

Claim 6. The method according to claim 5, wherein the

stator windings are formed in at least two winding sets by winding a plurality of continuous wires, and the stator windings are arranged at intervals of a predetermined number of slots so that the trailing ends of the sets of windings may not be superposed with respect to a circumferential direction of the stator core.

Claim 7. The method according to claim 5 or 6, wherein the slots of the stator core are open slots.

Claim 8. The method according to claim 7, wherein the stator windings embedded in the slots of the stator core are fixed in place by inserting magnetic wedges in the slots.

Claim 9. A plurality of stator windings embedded in a plurality of slots formed in a stator core surrounding a rotor provided with alternate N and S magnetic poles, supported on a frame and included in an electric rotating machine, said stator windings being formed by a method comprising the steps of:

winding a plurality of continuous wires around a spool;

winding flat straight parts of the stator windings to be press-formed in flat straight parts in rings around a cylindrical member provided with grooves the number of which is equal to that of the slots of the stator core;

inserting the cylindrical member in a bore defined

by the annular stator core;

adjusting the position of the cylindrical member in the bore of the annular stator core so that the grooves of the cylindrical member are positioned opposite to the slots of the stator core, respectively;

alternately folding back the sets of the windings outside the slots of the stator core to form windings embedded alternately in the direction of depth of the slots every predetermined number of slots; and

winding leading and trailing ends of the plurality of continuous wires at least one turn around the circumferentially arranged slots of the stator core so that the leading and the trailing ends of the plurality continuous wires are superposed.

Claim 10. The stator windings according to claim 9, wherein the stator windings are formed in at least two winding sets by winding a plurality of continuous wires, and the stator windings are arranged at intervals of a predetermined number of slots so that the trailing ends of the winding sets may not be superposed with respect to a circumferential direction of the stator core.

Claim 11. The stator windings according to claim 9, wherein the slots of the stator core are open slots, and the stator windings are embedded in the slots.

Claim 12. The stator windings according to claim 9,

wherein the stator windings embedded in the slots of the stator core are fixed in place by driving magnetic wedges in the slots.